Module code	M_WE_SEM4 PW 1C/2C ENDOK
Field of study	Veterinary medicine
Module name, also the name in English	Endocrinology
	Endokrynologia
Language of instruction	English
Module type	optional
Level of studies	Long-cycle master's degree studies
Form of study	Full-time
Year of study in the field of study	II
Semester of study in the field of study	IV
ECTS credits, divided into contact/non-contact hours	1 (0.6/0.4)
Academic title/degree, name of the person responsible for the module	Prof. dr hab. Marta Kankofer
Unit teaching the module	Department of Biochemistry; Faculty of Veterinary Medicine
Module objective	The Endocrinology module aims to extend and deepen the existing knowledge gained in the Animal Biochemistry and Animal Physiology courses in the field of endocrinology with information obtained from the latest scientific publications. Problem-focused presentation (using virtual cases) of the mechanisms of hormone action on cells, combined with the multidirectional effect of their action and the regulation of individual transformations in various tissues and organs, will ensure the integration of theoretical and practical knowledge.
The learning outcomes for the module include a description of the knowledge, skills and social competences that the student will gain after completing the module.	Knowledge:
	K1 - the student knows and describes various aspects of endocrinology including the structure of endocrine glands together with their biological activity
	K2 - the student describes mechanisms of hormonal regulation including the structure of hormones, their synthesis, transport, neutralisation and excretion
	K3 - the student analyses the results of endocrinological determinations
	Skills:
	S1 - the student is able to recognise the relationship between the action of hormones and drugs with hormonal action and clinical symptoms of metabolic disorders, which increases the quality of veterinary services
	S2 - the student demonstrates understanding of the need for continuous education in the field of endocrinology
	Social competences:
	Sc1 - the student is able to critically evaluate the discussed actions in the field of endocrinology and to propose their own solutions
	Sc2 - the student is aware of their own limitations and the related need for constant learning

<table>
<tr><td>Prerequisites and additional requirements</td><td colspan="3"></td></tr>
<tr><td>Module program content</td><td colspan="3">The mechanism of action of hormones. Reactions of hormone synthesis, transport, degradation and excretion. Hormones of the hypothalamic-pituitary axis. Thyroid hormones. The role of estrogens, progesterone, testosterone and other hormones in cycle regulation and reproductive behaviour in animals – peripheral and central mechanisms, genomic and non-genomic mechanisms. Hormonal regulation of the adrenal glands. Hormonal regulation of mineral metabolism. The role of the pineal gland and melatonin. Hormonal regulation of metabolism. Tissue hormones. Integration of mechanisms of hormone action with clinical manifestations of selected diseases.</td></tr>
<tr><td>List of core and supplementary literature</td><td colspan="3">1. Gardner i Shoback – General and clinical endocrinology of Greenspan 2011
2. Kaneko – Clinical biochemistry
3. Rijnberk i Kooistra – Clinical endocrinology of dog sand cats, 2011
4. Scientific papers published in Endocrinology, Prostaglandins, Steroids</td></tr>
<tr><td>Planned forms/activities/teaching methods</td><td colspan="3">Seminar exercises - Jigsaw, self-study materials on the unit's website and online materials available with a password (VikiWet, Casus)</td></tr>
<tr><td>Verification methods and ways of documenting the achieved learning outcomes.</td><td colspan="3">Students are given materials to prepare for all classes. Learning outcomes are verified in all classes through participation in discussion. Students must also prepare a paper on a selected topic. The paper is graded based on the presented topic area, summary, literature and use of pictures, diagrams, tables.</td></tr>
<tr><td rowspan="6">ECTS credits</td><td>Form of classes</td><td>Number of contact hours</td><td>ECTS credits</td></tr>
<tr><td>Practical classes
Consultations</td><td>15
2</td><td>0.5
0.1</td></tr>
<tr><td></td><td>Number of non-contact hours</td><td></td></tr>
<tr><td>Preparation for practical classes
Preparation of the paper
Consultations</td><td>7
2
2</td><td>0.2
0.1
0.1</td></tr>
<tr><td>Total</td><td>28 hours</td><td>1</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td>The workload of activities that requires direct participation of an academic teacher</td><td colspan="3">- participation in recitation section and laboratory classes - 15 hours,
- participation in consultations on the course credit preparation - 2 x 1 hour = 2 hours
A total of 17 hours, which is equivalent to 1 ECTS credit</td></tr>
<tr><td>Relation of module learning outcomes to course learning outcomes.</td><td colspan="3">K1 – A.W1.+; W2 – A.W9.+; W3 – B.W1.+
S1 – A.U4.+; U2 – A.U4.+, A.U5.+; U3 – B.U13.+
Sc1 – K8)+; K2 – K5)+</td></tr>
<tr><td>Elements and values affecting the final grade</td><td colspan="3">The final grade is a grade for the paper on a scale of 2-5 pts (85%) and a grade for class activity (15%)</td></tr>
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